#11
8
2/24/04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/010,203 Confirmation No. 6290
Appellant : Goldino Sousa Alves
Filed : November 30, 2001
TC/A.U. : 3683
Examiner : Bradley T. King

Docket No. : 01-603
Customer No. : 34704

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

APPEAL BRIEF

Sir:

This is an appeal to the Board of Patent Appeals and Interferences from a final rejection, dated August 15, 2003, of claims 2 and 10 - 14 issued by the Primary Examiner in Tech Center Art Unit 3683.

REAL PARTY IN INTEREST

The real party in interest is Otis Elevator Company of Farmington, Connecticut, which is a wholly owned subsidiary of United Technologies Corporation of Hartford, Connecticut.

RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to Appellant, Appellant's legal representatives, or Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 2 and 10 - 14 are pending in the application and are on appeal. Claims 1 and 3 - 9 have been cancelled. A copy of the claims on appeal are set forth in Appendix A.

STATUS OF AMENDMENTS

An amendment after final rejection was filed on November 14, 2003. In an advisory action issued on January 26, 2004, the Examiner indicated that the Amendment After Final Rejection would be entered for the purposes of this appeal and that the rejection under 35 U.S.C. 112, second paragraph had been withdrawn.

SUMMARY OF THE INVENTION

The present invention relates to an elevator noise and vibration isolation system. In particular, the claims on appeal are directed to the embodiment of FIGS. 1 and 2 in the drawings. The claims specific to the embodiments of FIGS. 3 - 12 have been cancelled and Appellant will file a divisional application to them in due course.

A periodically layered vibrating isolator (10), such as that shown in FIG. 1, is used to achieve improved noise and vibration isolation in elevators. Each vibration isolator (10) has at least one hard layer (22) formed from a metallic material

or a dense material and at least one soft layer (24) formed from an elastomeric material such as synthetic rubber, natural rubber, and a silicon elastomer material. Preferably, each vibration isolator (10) has a plurality of alternating hard and soft layers (22, 24) respectively. The vibration isolator(s) (10) are used to damp vibrations and eliminate noise. See page 3, lines 8 - 18, of the specification.

FIG. 2 illustrates a pair of periodically layered vibration isolators (10) of the type shown in FIG. 1 mounted to a guide rail system (12) in which a slide guide (not shown) moves. As can be seen from the Figure, each vibration isolator (10) is connected to a flange member (14) joined to the guide rail (12) and to a right angle bracket (16) which has an aperture (18) that allows the right angle bracket to be connected to an elevator cab (20). Each vibration isolator (10) may be connected to a respective flange member (14) and to a respective bracket (16) by one or more bolts (21). While it is preferred to use a pair of isolators (10), a single periodically layered vibration isolator (10) may be used. See page 4, lines 3 - 11, of the specification.

The vibration isolator system shown in FIG. 1 has been tested and has resulted in a 10 dB reduction in cab noise. See page 4, lines 12 - 13, of the specification.

By incorporating periodically layered vibration isolators into elevator systems, one can improve ride quality and achieve

financial savings as a result of design changes arising out of the improved noise and vibration isolation. Vibration isolators of the type shown in FIG. 1 are termed vibration isolators, but the frequency range these isolators can impact includes the audible range. The physical mechanism responsible for the improved isolation can be considered from either an energy wave or a modal viewpoint. Energy waves are partly reflected at each layer interface due to interference and wave scattering effects resulting from impedance mismatch between layers and internal modes of the isolator. Such a layered component may be considered as a discrete multi-DOF mount having transmission zeros at certain frequencies. Because of these effects, stop band isolation of 20 dB better than a conventional isolator can be achieved. Stop band refers to the frequency band in which the vibration levels are significantly attenuated. See page 7, lines 13 - 29, of the specification.

Through proper selection of material properties and geometric considerations, a layered isolator (10) such as that shown in FIG. 1 can efficiently be tuned to attenuate a desired frequency range. The term "tuned" refers to designing the layers of the isolator (10) so that the stop-band frequency improves overall system performance. The stop-band effect can be designed to occur in the isolator's compression direction, shear direction, or a combination of the two. If necessary, the stop=band frequencies in the shear and compression direction can

be designed to be different frequencies. See page 7, line 30 to page 8, line 6, of the specification.

PRIOR ART REFERENCES RELIED UPON

1. U.S. Patent No. 2,103,480 to Mason, issued December 28, 1937.

2. Japanese Patent Document No. 8 - 245,118 to Yoyoshima, published September 24, 1996.

REJECTION(S) OF RECORD

1. Claims 2 and 10 - 14 stand rejected under 35 U.S.C. 112, first paragraph.

2. Claim 2 stands rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 2,103,480 to Mason,

3. Claims 2 and 10 - 14 stand rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Document 8 - 245,118.

ISSUES

1. Is the subject matter of claims 2 and 10 - 14 described in the specification in such a manner as to enable one to make and/or use the claimed invention?

2. Is the subject matter of claim 2 anticipated by the Mason patent?

3. Is the subject matter of claims 2 and 10 - 14 anticipated by the Japanese patent document?

GROUPING OF CLAIMS

Each of the claims on appeal is believed to be separately patentable. None of the claims on appeal stand or fall together.

ARGUMENT

(A) CLAIMS 2 AND 10 - 14 COMPLY WITH THE REQUIREMENTS OF 35 U.S.C. 112, FIRST PARAGRAPH

The Examiner rejects claims 2 and 10 - 14 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. The Examiner avers that claim 2 requires an isolator fixed between a cab and a guide rail. The Examiner contends that the specification describes the guide rails extending the length of the elevator shaft and the slide guides riding on them. The Examiner contends that the specification is ambiguous as it further discloses and illustrates the guide rails being attached to the elevator cab. The Examiner contends that it unclear

which elements are attached to the cab and which elements are attached to the elevator shaft. Nothing could be further from the truth.

As pointed out to the Examiner in the amendment after final rejection, the paragraph bridging pages 3 and 4 of the specification describes what has been typically done. The invention being claimed however is the invention described in the paragraph on page 4, lines 3 - 13. It is clear from this portion of the specification, that the isolators 10 are mounted to a guide rail 12 **in which a slide guide (not shown) moves** (emphasis added). This portion of the specification goes on to say that each vibration isolator 10 is connected to a flange member 14 joined to the guide rail and to a right angle bracket 16 which has an aperture 18 that allows the right angle bracket to be connected to an elevator cab 20. Hence, there is no question that the guide rail 12 is connected to the elevator cab. As to which elements are attached to the elevator shaft, it is submitted that this inquiry is irrelevant to the issue of enablement because none of the elements which would be connected to the elevator shaft form any part of the claimed invention. Further, an artisan having knowledge of elevators could easily determine what elements should be connected to the elevator shaft. It is submitted that claims 2 and 10 - 14 are consonant with the disclosure and are well supported by the specification.

The rejection fails because Appellant has complied with the enablement requirement imposed by 35 U.S.C. 112, first paragraph. It is well settled that the enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation. See *AK Steel Corp. v. Sillac*, 68 USPQ2d 1280, 1287 (Fed. Cir. 2003). The Examiner offers no reason why the claimed invention could not be practiced. The specification in the instant application clearly enables one to practice the full scope of the claimed invention. Any gaps that may be present in the application can easily be filled by the artisan's knowledge and understanding that the whole purpose of an elevator is for the elevator to move relative to the elevator shaft. This means that the guide rail must move relative to the elevator shaft since it is connected to the elevator cab. A specification disclosure which contains a teaching of the manner of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is reason to doubt the objective truth of the statement containing that which must be relied upon for enabling support. See *In re Mayweather*, 169 USPQ 367, 369 (CCPA 1971).

With regard to the Examiner's comments in the advisory action concerning this rejection, the features of the guide rail

and slide guide are irrelevant. There is no claim limitation to the slide guide and no claim limitation relating to how the slide guide cooperates with the guide rail. Without question, one reading the instant specification would know how to attach the guide rail to the elevator cab with the claimed vibration isolator(s). That is what the claimed invention is about. As for the flange member 14, nothing else need be shown for one to understand how to make and use the claimed invention. The specification clearly states that the flange member 14 is joined to the guide rail 12 and that each isolator 10 is connected to a respective flange member 14 by one or more bolts 14. Nothing more needs to be said.

(B) CLAIM 2 IS ALLOWABLE OVER MASON

Claim 2 on appeal contains the limitation that the "elevator noise and vibration isolation system compris[es] ... at least one vibration isolator being positioned between said elevator component and said second component; each said vibration isolator having a plurality of layers with at least one layer being a hard layer and at least one layer being a soft layer; ..."

The rejection of claim 2 over Mason fails for one simple reason - Mason does not teach or suggest the claimed multi-layered vibration element with at least one hard layer and at least one soft layer. The only vibration isolator in Mason is

made solely from rubber. The element (17) is incorrectly identified by the Examiner as being part of the vibration isolator. As set forth in Mason, the element (17) is a gib that is formed of iron wood and preferably that species of iron wood commercially known as desert iron wood. See page 1, right hand column, lines 8 - 13 of Mason. Appellant's position is further supported by that portion of Mason on page 1, right hand column, lines 16 - 26 where the cushioning member is described as being an elastic material, preferably rubber, and wherein it is stated that the purpose of the cushioning member is to render the sliding movement of the gib on the guiding rail as being noiseless.

With respect to the Examiner's comments in the advisory action about Mason, there is no way any one would see the combination of elements 17 and 19 or 13 and 19 of Masson as an "isolator". Elements 17 and 13 do not form any part of a vibration isolator. Element 17 is clearly identified as the gib and element 13 is clearly identified as the shoe. Neither has any vibration isolation function. To take a position that the elements 13 and 17 form part of a vibration isolator is to misconstrue the teachings of the Mason patent - which clearly states that the cushioning member is solely element 19.

(C) CLAIMS 2 AND 10 - 14 ARE ALLOWABLE OVER YOYOSHIMA

Claim 2 on appeal contains the limitation that the "elevator noise and vibration isolation system compris[es] ... at least one vibration isolator being positioned between said elevator component and said second component; each said vibration isolator having a plurality of layers with at least one layer being a hard layer and at least one layer being a soft layer; ..."

The rejection of claims 2 and 10 - 14 over Yoyoshima fails because the Yoyoshima patent document does not teach or suggest a multi-layered vibration isolator with at least one hard layer and at least one soft layer. The Yoyoshima patent document merely discloses the use of a vibration proof rubber (22). The rubber (22) is vulcanized and adhered on an upper surface or a lower surface of a horizontal piece of an installation bracket (21). The shoe support metal (25) is connected to the vibration proof rubber (22) through a bolt (24) and a plate (23) as an L-shaped bracket (27) is welded vertically on a rising part (20a). When one looks at the translation of the Yoyoshima patent document, one cannot find any mention of a multu-layered vibration isolator.

Claim 10 states that "each said vibration isolator has a plurality of hard layers and a plurality of soft layers and said hard layers and said soft layers are alternating." Claim 10 is allowable because the Yoyoshima patent does not teach or suggest the vibration isolator construction set forth in the claim. The

vibration isolator in the Japanese patent publication is made solely from vulcanized rubber. It does not have a plurality of hard layers and a plurality of soft layers which are alternating.

Claim 11 states that each soft layer in the construction set forth in claim 10 is formed from at least one material selected from the group consisting of synthetic rubber, natural rubber, and a silicon elastomeric material. Claim 11 is allowable because the Yoyoshima patent does not teach a vibration isolator wherein there are a plurality of hard layers and a plurality of soft layers formed from a material selected from the group consisting of synthetic rubber, natural rubber, and a silicon elastomeric material.

Claim 12 is directed to "said at least one layered vibration isolator being connected at a first end to flange member joined to said guide rail". Claim 12 is allowable because the cited reference does not teach or suggest the claimed multi-layered isolator connected at a first end to a flange member joined to a guide rail.

Claim 13 calls for said at least one layered vibration isolator having a second end opposed to the first end and the at least one layered vibration isolator being joined at the second end to a bracket with an aperture that allows the bracket to be connected to the elevator cab. Claim 13 is allowable because the Yoyoshima patent document doe not have a multi-layered

isolator joined to a bracket with an aperture that allows the bracket to be connected to an elevator cab.

Claim 14 states that "said at least one vibration isolator further comprises a first layered vibration isolator connected to a first side of said guide rail and a second layered vibration isolator connected to a second side of said guide rail." Claim 14 is allowable because the Yoyoshima patent document does not teach or suggest the claimed first and second layered vibration isolators.

CONCLUSION

For the foregoing reasons, claims 2 and 10 - 14 are believed to be in condition for allowance. The Board is hereby requested to reverse the rejections of record and to remand the application to the Primary Examiner for allowance and issuance.

EXTENSION OF TIME REQUEST

A request for a one (1) month extension of time to file the instant Appeal Brief is enclosed herewith.

FEES

A check in the amount of $440.00 is enclosed herewith to cover the cost of the appeal brief fee and the extension of time fee. Should the Commissioner determine that an additional fee

is due as a result of the instant response, the Commissioner is hereby authorized to charge said fee to Deposit Account No. 02-0184.

Respectfully submitted,

Goldino Sousa Alves

By _____
Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Appellant

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: docket@bachlap.com

IN TRIPLICATE

Date: February 9, 2004

I, Nicole Motzer, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on **February 9, 2004**.

_____

APPENDIX

2. An elevator noise and vibration isolation system comprising an elevator component; a second component; at least one vibration isolator being positioned between said elevator component and said second component; each said vibration isolator having a plurality of layers with at least one layer being a hard layer and at least one layer being a soft layer; said elevator component comprising an elevator cab, said second component comprising a guide rail, and said at least one layered vibration isolator being connected to said guide rail and to said elevator cab.

10. An elevator noise and vibration system according to claim 2, wherein each said vibration isolator has a plurality of hard layers and a plurality of soft layers and said hard layers and said soft layers are alternating.

11. An elevator noise and vibration system according to claim 10, wherein each said soft layer is formed from at least one material selected from the group consisting of synthetic rubber, natural rubber, and a silicon elastomeric material.

12. An elevator noise and vibration system according to claim 2, further comprising said at least one layered vibration

isolator being connected at a first end to flange member joined to said guide rail.

13. An elevator noise and vibration system according to claim 12, further comprising said at least one layered vibration isolator has a second end opposed to said first end and said at least one layered vibration isolator is joined at said second end to a bracket with an aperture that allows the bracket to be connected to said elevator cab.

14. An elevator noise and vibration system according to claim 2, wherein said at least one vibration isolator further comprises a first layered vibration isolator connected to a first side of said guide rail and a second layered vibration isolator connected to a second side of said guide rail.